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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,005	11/17/2003	Toshiaki Inoue	8022-1064	9408

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EXAMINER	
NGUYEN, HAU H	
ART UNIT	**PAPER NUMBER**
2676	

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/713,005	INOUE ET AL.	
	Examiner	Art Unit	
	Hau H. Nguyen	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/17/2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/17/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Kida et al. (U.S. Patent No. 6,335,708).

Referring to claim 1, Kida et al. teach a method and apparatus of driving a display panel wherein, as shown in Figs. 3-5, comprising:

serially performing write operations for writing sub-field data of a pixel line within the display panel for a plurality of sub-fields into a frame memory (24A and 24B) (col. 9, lines 3-32);

serially performing read operations for reading sub-field data of a plurality of pixel lines for a sub-field from the frame memory (col. 9, lines 33-46); and

at least two of write operations (first field A and second field B, Fig. 5) are allowed to be performed between two adjacent read operations (one from the first period and the other from the second period) (Fig. 4).

In regard to claims 3-6, as shown in Fig. 8, Kida et al. teach generating a read request signal activated for requesting read operations (read enable signals RD1 and RD2), and generating a write request signal activated for requesting write operations (write enable signals

WR1 and WR2), and in response to activation of the read request signal, associated one of the read operations is performed immediately after the activation of the read request signal when the frame memory is not engaged in write operation (Figs. 8I and 8J, reading A1 of frame memory 34A during period t1-t2), while associated one of read operations is performed after completion of associated one of write operations when the frame memory is engaged in the associated one of write operations (reading A2 of frame memory 34B after completion of writing A2 periods t1-t3). With reference also to Fig. 8, Kida et al. further teach in response to activation of the write request signal, one of the write operations associated with the activation is performed immediately after the activation of the write request signal when the frame memory is not engaged in read nor write operation (writing A1 at period t0-t1), associated one of the write operations is performed after completion of associated one of the read operations when the frame memory is engaged in the associated one of the read operations (writing A1/A2 of frame memory 34A after completion of reading A1, Figs. 8H, 8I, and 8J, period t2-t3), and the associated one of the write operations is performed after completion of previous one of the write operations when the frame memory is engaged in the previous one of the write operations (writing A1/A2 to the frame memory 34B, Figs. 8L, period t3-t4). It is also noticed from Fig. 8, that the read and write request signals RD1, RD2, WR1, and WR2 are kept activated until read or write operations are initiated.

In regard to claim 7, as cited above, Kida et al. teach a timing controller for generating read and write start pulse signals in response to writ and read request signals, and a read/write control circuit for reading subfield from and writing subfield to a frame memory, and further teach initiating at least two write operations between two adjacent read operations.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kida et al. (U.S. Patent No. 6,335,708) in view of Muto et al. (U.S. Patent No. 6,876,395).

In regard to claim 2, as applied to claim 1, Kida et al. teach all the limitations of claim 2, except that write operations are performed during a single cycle of a first horizontal sync signal, and read operations are performed during a single cycle of a second horizontal sync signal.

However, Muto et al. teach a method of driving a display panel wherein, as shown in Fig. 7, comprising a memory control part 21 having a write control circuit 22, a read control circuit 23, and a frame memory 7. As shown in Fig. 11b, Muto et al. also teach two write operations from the frame memory 7 are allowed between two adjacent read operations. Muto et al. further teach, the write control circuit 22 controlling write operations of the frame memory 7, is performed under a first horizontal synchronizing signal H12, and the read control circuit 23 controlling read operations of the frame memory 7, is performed under a second horizontal synchronizing signal H21 (col. 20, lines 64-67, and col. 21, lines 1-12).

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Muto et al. in combination with the method as taught by Kida et al. in order to avoid skipping of data (col. 24, lines 54-58).

In regard to claims 8 and 9, as cited above, Kida et al. teach the frame memory is able to be switched between: a write start state in response to activation of a write request signal (write enable WR1, WR2); a first write operation state after write start state (start writing field A into the frame memory 24, Figs. 4 and 5); a second write operation state (start writing field B into the frame memory 24, Figs. 4 and 5). Kida et al. also teach a read start state in response to activation of a read request signal (read enable signals RD1, RD2) when the frame memory is in write operation state (Fig. 8), and immediately after the read start state initiated by the read request signals, a read operation is performed. Thus, Kida et al. teach all the limitations of claims 8 and 9, except that the frame memory can be switched to an idle state in response to activation of a reset signal.

However, as cited above, Muto et al. teach a method of driving a display panel having a frame memory that can be in a reading state, writing state, or idle state (col. 23, lines 45-52).

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Muto et al. in combination with the method as taught by Kida et al. so that a display device can be more stably operated while the circuit structure can be simplified (col. 6, lines 5-10).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 571-272-7787. The examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778.

The fax number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-2 17-9197 (toll-free).

H. Nguyen

09/23/2005

Matthew C. Bella

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